CLAIMS

What is claimed is:

1. An evaporation mask formed of a thin film, wherein the evaporation mask is drawn taut by application of tension and comprises:

at least one mask unit, comprising:

a plurality of main apertures, and

a plurality of first dummy apertures formed adjacent to outermost ones of the main apertures in a direction in which tension is applied to the evaporation mask.

2. The evaporation mask of claim 1, wherein the main apertures form an effective deposition area, and the first dummy apertures form an ineffective deposition area.

3. The evaporation mask of claim 2, wherein at least one of the first dummy apertures is formed parallel to the main apertures, and at least another one of the first dummy apertures is formed perpendicular to the main apertures.

4. The evaporation mask of claim 2, comprising at least two mask units, and further comprising a plurality of second dummy apertures formed outside and adjacent to the outermost mask units in the direction in which tension is applied to the evaporation mask.

5. The evaporation mask of claim 4, wherein the second dummy apertures are formed outside the effective deposition areas where the mask units are formed.

6. The evaporation mask of claim 4, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least another one of the second dummy apertures is formed perpendicular to the main apertures.

7. An evaporation mask formed of a thin film, wherein the evaporation mask is drawn taut by application of tension, the evaporation mask comprising:

at least two mask units each having at least one main aperture; and

at least one second dummy aperture formed outside and adjacent to the mask units located at the outermost sides in the direction in which tension is applied to the evaporation mask.

8. The evaporation mask of claim 7, wherein the at least one main aperture of each of the mask units is used to form an effective deposition area, and the at least one second dummy aperture is formed outside of the effective deposition areas where the mask units are formed.

9. The evaporation mask of claim 7, wherein the at least one second dummy aperture comprises at least two second dummy apertures, wherein at least one of the second dummy apertures is formed parallel to the at least one main aperture of the mask units, and at least another one of the second dummy apertures is formed perpendicular to the at least one main aperture.

10. A method of manufacturing an organic electroluminescent (EL) device, the method comprising:

forming first electrodes on a substrate;

disposing an evaporation mask to form an organic film over the substrate, the evaporation mask drawn taut by application of tension and having at least one mask unit, the mask unit comprising a plurality of main apertures and a plurality of first dummy apertures formed adjacent to outermost ones of the main apertures in a direction in which tension is applied to the evaporation mask;

forming the organic film comprising an effective luminescent area to cover at least the first electrodes by evaporating an organic material containing an organic luminescent material through the main apertures, and forming a first dummy pattern area outside the effective luminescent area through the first dummy apertures;

forming second electrodes on the organic film so that the effective luminescent area is formed at an area where the first and second electrodes overlap; and

sealing the resulting structure.

11. The method of claim 10, wherein at least one of the first dummy apertures is formed parallel to the main apertures, and at least another one of the first dummy apertures is formed perpendicular to the main apertures.

12. The method of claim 10, wherein at least two organic EL devices are manufactured in a single process, and the evaporation mask comprises at least two mask units, through each of which the organic film of a single organic EL device can be deposited, and a plurality of second dummy apertures outside and adjacent to outermost ones of the mask units in the direction in which tension is applied to the evaporation mask.

13. The method of claim 12, wherein the second dummy apertures of the evaporation mask are located outside the effective luminescent areas of the organic EL devices that are deposited by the outermost mask units adjacent to the second dummy apertures.

14. The method of claim 12, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least another one of the second dummy apertures is formed perpendicular to the main apertures.

15. The method of claim 10, wherein in forming the second electrodes, an evaporation mask to form the second electrodes is disposed over the substrate, the evaporation mask drawn taut by application of tension and having at least one mask unit, the mask unit comprising a plurality of main apertures and a plurality of first dummy apertures formed adjacent to the outermost main apertures in the direction in which tension is applied to the evaporation mask, the second electrodes are formed on the effective luminescent area through the main apertures, and a second dummy pattern area is formed outside the effective luminescent area through the first dummy apertures.

16. The method of claim 15, wherein at least one of the first dummy apertures is formed parallel to the main apertures, and at least another one of the first dummy apertures is formed perpendicular to the main apertures.

17. The method of claim 15, wherein at least two organic EL devices are manufactured in a single process, and the evaporation mask comprises at least two mask units, through each of which the second electrodes of a single organic EL device can be deposited, and a plurality of second dummy apertures outside and adjacent to the outermost mask units in the direction in which tension is applied to the evaporation mask.

18. The method of claim 17, wherein the second dummy apertures are located outside the effective luminescent areas of the organic EL devices that are deposited by the outermost mask units adjacent to the second dummy apertures.

19. The method of claim 17, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least another one of the second dummy apertures is formed perpendicular to the main apertures.

20. The method of claim 10, wherein at least two organic EL devices are manufactured in a single process, the second electrodes are formed using an evaporation mask drawn taut by application of tension and having at least two mask units, through which the second electrodes of the organic EL devices can be deposited, and the evaporation mask comprises a plurality of second dummy apertures outside and adjacent to outermost mask units in the direction in which tension is applied to the evaporation mask.

21. The method of claim 20, wherein the second dummy apertures are located outside the effective luminescent areas of the organic EL devices that are deposited by the outermost mask units adjacent to the second dummy apertures.

22. The method of claim 20, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least another one of the second dummy apertures is formed perpendicular to the main apertures.

23. A method of manufacturing an organic EL device, the method comprising:

forming first electrodes for an organic EL device on a substrate;

disposing an evaporation mask to form an organic film over the substrate, the evaporation mask drawn taut by application of tension and including at least two mask units each comprising a plurality of main apertures and a plurality of second dummy apertures formed outside and adjacent to outermost ones of the mask units in a direction in which tension is applied to the evaporation mask;

forming the organic film comprising an effective luminescent area to cover at least the first electrodes by evaporating an organic material containing an organic luminescent material through the main apertures of each of the mask units;

forming second electrodes on the organic film so that the effective luminescent area is formed at an area where the first and second electrodes overlap; and

sealing the resulting structure.

24. The method of claim 23, wherein the second dummy apertures are located outside the effective luminescent areas of the organic EL devices that are deposited by outermost ones of the mask units adjacent to the second dummy apertures.

25. The method of claim 23, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least another one of the second dummy apertures is formed perpendicular to the main apertures.

26. The method of claim 23, wherein in forming the second electrodes, an evaporation mask to form the second electrodes is disposed over the substrate, the evaporation mask drawn taut by application of tension and including at least two mask units, the mask units each comprising a plurality of main apertures and a plurality of first dummy apertures formed adjacent to the outermost main apertures in the direction in which tension is applied to the evaporation mask, the second electrodes are formed on each of the effective luminescent areas through the main apertures, and a second dummy pattern area is formed outside each of the effective luminescent areas through the first dummy apertures.

27. The method of claim 26, wherein at least one of the first dummy apertures is formed parallel to the main apertures, and at least another one of the first dummy apertures is formed perpendicular to the main apertures.

28. The method of claim 26, wherein the evaporation mask comprises a plurality of second dummy apertures outside and adjacent to the outermost mask units in the direction in which tension is applied to the evaporation mask.

29. The method of claim 28, wherein the second dummy apertures of the evaporation mask are located outside the effective luminescent areas of the organic EL devices that are deposited by the outermost mask units adjacent to the second dummy apertures.

30. The method of claim 28, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least another one of the second dummy apertures is formed perpendicular to the main apertures.

31. The method of claim 23, wherein the second electrodes are formed using an evaporation mask drawn taut by application of tension and having at least two mask units, through each of which the second electrodes of the organic EL devices are deposited, and the evaporation mask comprises a plurality of second dummy apertures outside and adjacent to outermost mask units in the direction in which tension is applied to the evaporation mask.

32. The method of claim 31, wherein the second dummy apertures of the evaporation mask are located outside the effective luminescent areas of the organic EL devices that are deposited by the outermost mask units adjacent to the second dummy apertures.

33. The method of claim 31, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least one of the second dummy apertures is formed perpendicular to the main apertures.

34. A method of manufacturing an organic EL device, the method comprising:

forming first electrodes on a substrate in a predetermined pattern;

forming an organic film comprising an effective luminescent area to cover at least the first electrodes by evaporating an organic material containing an organic luminescent material;

disposing an evaporation mask to form second electrodes over the organic film, the evaporation mask drawn taut by application of tension and comprising a plurality of main apertures and a plurality of dummy apertures formed adjacent to outermost ones of the main apertures in a direction in which tension is applied to the evaporation mask;

forming the second electrodes through the main apertures so that the effective luminescent area is formed at an area where the first and second electrodes overlap, and forming a second dummy pattern area outside the effective luminescent area through the first dummy apertures; and

sealing the resulting structure.

35. The method of claim 34, wherein at least one of the first dummy apertures is formed parallel to the main apertures, and at least another one of the first dummy apertures is formed perpendicular to the main apertures.

36. The method of claim 34, wherein at least two organic EL devices are manufactured in a single process, and the evaporation mask comprises at least two mask units, through each of which the second electrodes of a single organic EL device can be deposited, and a plurality of second dummy apertures outside and adjacent to outermost ones of the mask units in the direction in which tension is applied to the evaporation mask.

37. The method of claim 36, wherein the second dummy apertures of the evaporation mask are located outside the effective luminescent areas of the organic EL devices that are deposited by the outermost mask units adjacent to the second dummy apertures.

38. The method of claim 36, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least another one of the second dummy apertures is formed perpendicular to the main apertures.

39. A method of manufacturing an organic EL device, the method comprising:

forming first electrodes for an organic EL device on a substrate;

forming an organic film comprising an effective luminescent area to cover at least the first electrodes by evaporating an organic material containing an organic luminescent material;

disposing an evaporation mask to form second electrodes over the organic film, the evaporation mask drawn taut by application of tension and comprising at least two mask units comprising a plurality of main apertures and a plurality of second dummy apertures formed outside and adjacent to outermost ones of the mask units in a direction in which tension is applied to the evaporation mask;

forming the second electrodes through the main apertures of each of the mask units so that the effective luminescent area is formed at an area where the first and second electrodes overlap; and

sealing the resulting structure.

40. The method of claim 39, wherein the second dummy apertures of the evaporation mask are located outside the effective luminescent areas of the organic EL devices that are deposited by the outermost mask units adjacent to the second dummy apertures.

41. The method of claim 39, wherein at least one of the second dummy apertures is formed parallel to the main apertures of the mask units, and at least one of the second dummy apertures is formed perpendicular to the main apertures.

42. An organic EL device comprising:

a substrate;

an effective luminescent area formed by sequentially stacking first electrodes, an organic film including an organic luminescent layer, and second electrodes on the substrate, wherein the organic film emits light at the area where the first and second electrodes overlap;

a terminal unit formed on the edge of the substrate outside the effective luminescent area, the terminal unit having a first electrode terminal connected to the first electrodes and a second electrode terminal connected to the second electrodes;

a sealing unit formed on the substrate so as to expose the terminal unit and seal at least the effective luminescent area; and

a dummy pattern area formed outside of the effective luminescent area.

43. The organic EL device of claim 42, wherein the dummy pattern area is formed between the effective luminescent area and the terminal unit.

44. The organic EL device of claim 42, wherein the dummy pattern area is formed inside an area sealed by the sealing unit.

45. The organic EL device of claim 42, wherein the dummy pattern area is formed of the same material as the organic luminescent layer.

46. The organic EL device of claim 42, wherein the dummy pattern area is formed of the same material as the organic film.

47. The organic EL device of claim 42, wherein the dummy pattern area is formed of the same material as the second electrodes.

48. The organic EL device of claim 42, wherein the dummy pattern area is formed outside of the organic luminescent area in an upper area of the organic film.

49. An evaporation mask formed of a thin film, wherein the evaporation mask is drawn taut by application of tension, the evaporation mask comprising:

at least one mask unit comprising:

at least one main aperture, and

at least one first dummy aperture formed adjacent to an outermost at least one main aperture in a direction in which tension is applied to the evaporation mask.

50. The evaporation mask of claim 49, further comprising at least one second dummy aperture formed outside and adjacent to the outermost at least one mask unit in the direction in which tension is applied to the evaporation mask.

51. A mask unit for an evaporation mask, comprising:

a main aperture; and

a dummy aperture;

wherein the dummy aperture prevents the main aperture from being deformed by tension applied to the evaporation mask.